

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A liquid crystal display device, comprising:

a liquid crystal display (LCD) panel, the LCD panel including a plurality of gate lines and a plurality of data lines crossing the plurality of gate lines, and a plurality of red (R), green (G), and blue (B) pixels arranged in a matrix pattern;

a gate driving unit to apply scan signals to the plurality of gate lines;

a lookup table to store a gray scale value corresponding to a predetermined gray scale level of a B color, wherein the predetermined gray scale level is a gray scale level immediately prior to a reference gray scale level to begin reducing a color reproducibility, and the stored gray scale value is the maximum gray scale value corresponding to the maximum gray scale level displayable by the LCD panel for which the color reproducibility of the B color is not reduced of a displayable color;

a data processing unit that analyzes a gray scale level the displayable of the B color in received image information, replaces a gray scale value of the gray scale level of the B color value in the received image information with the stored gray scale value corresponding to the predetermined gray scale level of the B color a B color value at gray scale immediately prior to the level to begin reducing a color reproducibility retrieved from the lookup table in response to a determination that the gray scale level of the B color value in the received image information is greater than a the reference gray scale level to begin reducing the color reproducibility, and that outputs a image information including a compensated displayable gray scale value of the gray scale level of the B color; and

wherein in response to the determination that the B color value of the displayable color is greater than the reference gray scale level to begin reducing a color reproducibility, the data processing unit retrieved at least one of an R color value and a G color value from the lookup table to be mixed with the received image information to compensate the displayable color; and

a data driving unit to receive the image information including the compensated ~~displayable-gray scale value of the B~~ color and to apply the compensated image information to the data line.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) The device of claim 6, wherein the lookup table stores gray scale values each corresponding to one of 64 gray scale levels of the blue color.

8. (Previously Presented) The device of claim 7, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

9. (Previously Presented) The device of claim 8, wherein stored gray scale values corresponding to a 52nd gray scale level to a 64th gray scale level are identical to a gray scale value corresponding to the 51st gray scale level.

10. (Original) The device of claim 1, wherein the lookup table stores gray scale values of blue, red, and green colors.

11. (Previously Presented) The device of claim 10, wherein gray scale values of the 52nd gray scale level to the 64th gray scale level are storable in the lookup table upon mixing gray scale values of at least two of R, G, and B colors.

12. (Currently Amended) A method for improving a color reproducibility of a liquid crystal display (LCD) device, comprising:

increasing a gray scale value of a B color ~~of a red (R), green (G), and blue (B) color~~ of the LCD device;

detecting during the increasing of the gray scale value of the B color, a reference gray scale level ~~value~~ of B color at which a color reproducibility of the LCD device is begin to reduced;

storing a gray scale value corresponding to a correspondence of the detected gray scale value of B color and a predetermined gray scale level of a displayable color having the B color in a lookup table, wherein the predetermined gray scale level is a gray scale level immediately prior to the detected gray scale level, and the stored gray scale value is the maximum gray scale value corresponding to the maximum gray scale level displayable by the LCD device for which the color reproducibility of the B color is not reduced ~~at which a color reproducibility of the LCD device is reduced in a lookup table;~~

compensating a ~~displayable color~~ input video data by analyzing ~~the~~ a gray scale level of the B color in the input video data ~~displayable color~~, replacing a gray scale value of the gray scale level of the B color ~~value~~ in the input video data with the stored gray scale value corresponding to the predetermined gray scale level of the B color ~~a B color value at gray scale immediately prior to the level to begin reducing a color reproducibility~~ retrieved from the lookup table in response to a determination that the gray scale level of the B color in the input video data ~~value of the displayable color~~ is greater than a ~~the~~ reference gray scale level ~~to begin reducing the color reproducibility~~, and outputting a input video data including a compensated displayable gray scale value of the gray scale level of the B color; and

applying the image information including ~~of~~ the compensated gray scale value of the B ~~displayable color~~ to data lines of the LCD device.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Previously Presented) The method of claim 12, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

18. (Previously Presented) The method of claim 17, wherein the gray scale value at which the color reproducibility is reduced corresponds to a 52nd one of 64 gray scale levels of blue color displayable by the LCD device.

19. (Currently Amended) A method of driving a liquid crystal display (LCD) ~~display~~ device, comprising:

receiving image information including a gray scale value corresponding to a displayable red(R), green(G), blue(B) color by the display-LCD device;

determining whether the gray scale level value of the B color of the ~~displayable color~~ is greater than a predetermined reference gray scale level to begin reducing a color reproducibility in the display-LCD device;

applying the received image information to the display-LCD device upon a determination that the gray scale ~~value~~ level of the B color is not greater than the predetermined reference gray scale level; and

compensating the received image information ~~a displayable color~~ by analyzing a gray scale level of the B ~~the displayable color~~ in the received image information, and replacing a gray scale value of the gray scale level of the B color ~~gray scale value~~ in the received image information with a gray scale value of a gray scale level B color value at gray scale immediately prior to the predetermined reference gray scale level ~~to begin reducing a color reproducibility~~ retrieved from a lookup table in response to a determination that the gray scale level of the B color ~~gray scale value of the displayable color~~ in the received image information is greater than the predetermined reference gray scale level ~~to begin reducing a color reproducibility~~; and

~~retrieving at least one of an R color value and a G color value from the lookup table to be mixed with the received image information to compensate the displayable color in response to the determination that the B color value of the displayable color is greater than the reference gray scale level to begin reducing a color reproducibility; and~~

outputting a received image information including a compensated gray scale value of the gray scale level of the B ~~displayable color~~.

20. (Currently Amended) The method of claim 19, further comprising applying the compensated image information to a plurality of data lines of the display-LCD device.

Application No.: 10/691,312
Amdt. dated March 25, 2009
Reply to Office Action dated November 25, 2008

Docket No.: 8733.904.00

21. (Cancelled)

22. (Cancelled)

23. (Original) The method of claim 19, wherein the compensating includes mixing gray scale values of at least two of red, green, and blue colors.